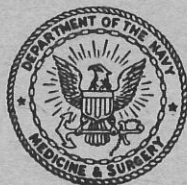


C. J. Fairless Jr.

**HEALTH PRECAUTIONS
FOR PERSONNEL
ON DETACHED DUTY**

NAVMED 193



**BUREAU OF MEDICINE AND SURGERY
NAVY DEPARTMENT
WASHINGTON, D. C.**

1944

HEALTH PRECAUTIONS
FOR PERSONNEL ON DETACHED DUTY

Incoming reports of disease in foreign countries make slight revisions of the list of precautions necessary in those countries almost continuously necessary. This list must therefore be considered an ever changing one and never in complete agreement with latest reports of disease prevalence. Suggestions as to changes will be welcomed.

Bureau of Medicine and Surgery
Navy Department
Washington, D.C.

HEALTH PRECAUTIONS FOR PERSONNEL ON DETACHED DUTY.

Detached duty frequently carries with it the necessity of dealing single-handed and without the aid of a medical officer with a group of health hazards which are quite new to the individual. And because of his lack of experience with these new hazards he may underestimate their importance and take foolish chances or go the other extreme and take precautions out of proportion to the danger. In accepting an assignment to a foreign country the general assumption should be made that that country has its special health hazards and that one of our first duties is to find out what those hazards are in order that we may take reasonable precautions to prevent falling a victim to them.

OBTAINING SPECIFIC ADVICE

If one knows before leaving the Continental U. S. to what foreign regions he is to be assigned he should make inquiry from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. as to (1) the communicable-disease prevalence in the specified region; (2) the prophylactic immunizations indicated; (3) the special precautions necessary for travelers in those regions.

If one's territorial assignment has not been made long enough before embarking to enable one to make such preparations, the next best plan is to utilize one or more of the following devices: (1) a conference with the ship's medical officer enroute regarding communicable-disease prevalence, immunizations, special precautions indicated; (2) a visit upon disembarking to the office of the U. S. consul or to the office of the local representative of the national or provincial government to consult public health records showing death rates from the important diseases; (3) a conference with the local public health authorities regarding the prevalence of communicable disease and measures for prevention.

A ROUGH GUIDE TO NECESSARY PRECAUTIONS

By reference to the list below one can determine in a general way what health precautions are necessitated in the various areas of the world due to the presence there of specified diseases or other special hazards. It should be remembered, however, that within these large subdivisions great variations in altitude, climate, flora, fauna, insect life and bacterial life occur and that for that reason these lists can only be generally accurate and need supplementation by local medical advice.

CHIEF POLITICAL SUBDIVISIONS OF THE WORLD WITH KEY TO THE CHIEF HEALTH PRECAUTIONS NECESSARY IN THOSE AREAS

Each Figure Refers To A Separate Set of Precautions As Set
Forth Below Under General Precautions and Specific
Precautions.

Aden Colony and Protectorate - (7A) (11B) (23B) (1) (9) (2) (5) (13)
Aegean Is. - (5) (6) (11A) (13) (15A) (16B) (22) (20A) (17) (1) (9) (2)
Afghanistan - (5) (11A) (11B) (13) (15A) (15B) (23A) (1) (9) (2)
Africa - (see separate countries)
Alaska - (8)
Albania - (11A) (13) (23B) (17) (1) (2)
Alberta - (14) (16A) (22) (8)
Aldabra Is. - (1) (9) (2)
Algeria - (5) (7A) (10) (11A) (11B) (13) (14) (15A) (17) (23A) (24) (23B) (16B) (18A) (20A) (1) (9) (2)
Andaman Is. - (5) (13) (23B) (20A) (1) (9) (2) (20D)
Andorra - (5) (7A) (11A) (11B) (13) (15B) (16B) (23B)
Anglo-Egyptian Sudan - (5) (7A) (7B) (7C) (10) (11A) (12) (13) (15A) (23B) (16B) (18A) (21B) (20A) (1) (9) (2) (25A) (25B)
Angola - (5) (7A) (7B) (14) (15B) (23B) (21A) (20A) (1) (9) (2) (25A) (25B)
Annam - (4) (5) (7A) (13) (14) (15A) (23D) (23B) (20A) (1) (9) (2)
Antarctic Regions - (8)
Antigua, with Barbuda - (7A) (11C) (18B) (20A) (1) (9) (2)
Arabia - (7A) (11A) (11B) (13) (20C) (23B) (18A) (1) (9) (2) (5) (4) (14)
Arctic Regions - (8)
Argentina - (6) (11C) (14) (15B) (23B) (21C) (20A) (17) (1) (9) (2) (25B) (20B)
Armenia - (11A) (13) (15A) (23A) (1) (9) (2)
Aruba - (5) (7A) (11C) (13) (15B) (18B) (20A) (1) (9) (2)
Ascension Is. - (1) (9) (2)
Asia - (see separate countries)
Asir - (7A) (11B) (20C) (23B) (1) (9) (2)
Australia - (5) (6) (7A) (13) (10) (15A) (23B) (23C) (23D) (20A) (19 A(7)(8)(9)) (1) (9) (2) (15B)
Austria - (15A) (22) (23A)
Azerbaijan - (11A) (13) (15A) (23A) (1) (9) (2)
Azores - (5) (14)
Bahama Is. - (7A) (1) (9) (5) (2C) (2A)
Bahrain Is. - (11A) (13) (18A) (23B) (1) (9) (2) (4) (14)
Balearic Is. - (13) (1) (9) (2) (16B)
Barbados - (5) (7A) (13) (18B) (20A) (1) (9) (2) (24)

Basutoland - (6) (13) (14) (16C) (18A) (23A) (1) (9) (2) (12)
 Bechuanaland - (7A) (16C) (1) (9) (2) (13) (21A) (12) (10) (18B) (25B)
 Belgian Congo (incl. Ruanda) - (5) (7A) (11B) (13) (14) (15B) (23B) (16B) (18A) (18B) (21A) (20A) (7B) (7C) (12) (10) (19A) (19B) (1) (9) (2) (23B) (20D) (25A) (24) (25B)
 Belgium - (23B)
 Bermuda Is. - (1) (5) (2C) (7A)
 Bhutan - (5) (11A) (1) (9) (2)
 Bismarck Arch. - (5) (7A) (13) (23B) (2A) (1) (9) (2) (20A) (23D) (10) (12)
 Bolivia - (3) (10) (11A) (11C) (13) (14) (15A) (20B) (23A) (4) (23B) (21C) (20A) (1) (9) (2) (25B)
 Borneo, Netherlands - (5) (7A) (10) (13) (14) (20A) (1) (9) (2) (23B) (24) (17C)
 Brazil - (4) (5) (7A) (10) (11A) (11C) (13) (14) (20B) (23A) (16D) (18B) (23B) (25A) (19B(6)(7)(8)(9)) (21C) (20A) (12) (1) (9) (2) (25B)
 British Columbia - (15B) (16A) (22) (8)
 British Honduras - (7A) (11C) (13) (20A) (1) (9) (2)
 British North Borneo - (5) (7A) (13) (23B) (20A) (1) (9) (2)
 Brunei - (5) (7A) (13) (23B) (20A) (1) (9) (2)
 Bulgaria - (11A) (13) (23A) (16B) (1) (2)
 Burma - (1) (2) (4) (5) (7A) (10) (11A) (13) (14) (15A) (16E) (20A) (1) (9) (23B) (19A(3)(4)(5)) (19B(10))
 Cambodia - (5) (7A) (13) (14) (15A) (23D) (23B) (20A) (1) (9) (2)
 Cameroons, French - (5) (7A) (7B) (7C) (11B) (14) (23B) (7D) (18A) (18B) (21A) (20A) (12) (13) (1) (9) (2) (24) (25A) (25B)
 Canada - (8) (22) (16A) (14) (13) (23B) (15B)
 Canal Zone - (5) (11C) (13) (15B) (21C) (23B) (20A) (1) (9) (2)
 Canary Is. - (5) (1) (9) (2)
 Cape of Good Hope - (6) (13) (14) (16C) (18A) (1) (9) (2)
 Cape Verde Is. - (5) (13) (1) (9) (2)
 Caroline Is. - (5) (20A) (1) (9) (2) (4) (14)
 Cayman Is. - (5) (7A) (13) (15B) (20A) (1) (9) (2)
 Celebes and Great East - (4) (5) (7A) (10) (13) (14) (18C) (20A) (1) (9) (2) (24) (17C)
 Central America - (see separate countries)
 Central Europe - (see separate countries)
 Ceylon - (4) (7A) (10) (13) (14) (15A) (20A) (1) (9) (2) (12)
 Channel Is.
 Chile - (3) (6) (11C) (14) (20B) (23A) (21C) (1) (2) (4) (23B)
 China - (4) (5) (7A) (10) (11A) (11B) (13) (14) (15A) (23B) (23D) (18C) (20A) (12) (1) (9) (2) (17A)
 Chosen - (4) (5) (7A) (13) (15A) (23A) (1) (9) (2)
 Christmas Is. - (5) (1) (9) (2)
 Cochin China - (4) (5) (7A) (13) (14) (15A) (23D) (23B) (20A) (1) (9) (2) (24)
 Cocos Is. - (1) (9) (2)

Colombia - (3) (5) (7A) (7C) (10) (11C) (13) (14) (15B) (20B) (23A) (4) (16A) (18B) (20A) (12) (1) (9) (2) (25A) (23B) (25B)
 Comoro Is. - (7A) (1) (9) (2)
 Cook Is. - (5) (1) (9) (2)
 Corsica - (5) (11A) (13) (16B) (1) (9) (2)
 Costa Rica - (5) (7A) (11C) (13) (15B) (20A) (1) (9) (2)
 Crete - (13) (1) (9) (2) (5) (11A)
 Cuba - (5) (7A) (11C) (13) (15B) (20B) (23B) (20A) (12) (1) (9) (2) (10)
 Curacao - (5) (7A) (11C) (15B) (18B) (20A) (1) (9) (2)
 Cyprus - (13) (1) (9) (2) (12) (18A)
 Czechoslovakia - (23A) (22)
 Dahomey - (5) (7A) (7B) (7C) (14) (23B) (18A) (18B) (21A) (1) (9) (2) (20A) (24) (25A) (25B)
 Dakar - (7A) (13) (15A) (23A) (18B) (21A) (20A) (1) (9) (2) (14) (25A)
 Danzig - (15A) (22) (23A)
 Denmark - (15A) (23B)
 Dominica - (7A) (11C) (18B) (20A) (5) (13) (23) (1) (9) (2) (20B)
 Dominican Republic - (5) (7A) (11C) (13) (15B) (23B) (18B) (20A) (1) (9) (2) (20B)
 Dutch East Indies - (see Netherlands Indies)
 Easter Is. - (1) (9) (2)
 Eastern Europe - (see separate countries)
 Ecuador - (3) (10) (13) (15A) (23A) (18B) (1) (9) (2) (4) (14) (7A) (25A) (20B)
 Egypt - (5) (7A) (10) (11A) (11B) (13) (14) (15A) (23A) (16B) (17) (18A) (24) (18B) (20A) (12) (1) (9) (2)
 England - (15A) (23B)
 Eritrea - (7A) (11A) (13) (14) (23B) (18A) (1) (9) (2) (17A) (25A)
 Estonia - (8) (13) (23A) (2D)
 Ethiopia - (7A) (11A) (11B) (13) (15A) (15B) (23A) (23B) (18A) (20A) (25A) (12) (1) (9) (2) (25B)
 Europe - (see separate countries)
 Faeroes, The - (8)
 Falkland Dependency - (8)
 Falkland Is. - (13) (12) (5) (21A)
 Fed. Malay States - (1A) (10) (13) (23B) (23D) (5) (7A) (14) (20A) (1) (9) (2) (6) (15) (24)
 Fernando Po. - (5) (7A) (13) (14) (20A) (1) (9) (2)
 Fiji Is. - (5) (7A) (20A) (1) (9) (2)
 Finland - (8)
 Formosa - (4) (5) (13) (23D) (20A) (1) (9) (2)
 France - (11A) (11B) (23A) (23B) (16B) (17) (13) (7A) (18A)
 French Equatorial Africa - (5) (7A) (7B) (7C) (10) (11B) (12) (13) (14) (15B) (19A(3)(4)(5)) (19B(10)) (23A) (23B) (18B) (21A) (20A) (1) (9) (2) (25A) (25B)
 French Indochina - (4) (5) (7A) (10) (13) (20D) (14) (15A) (23B) (23D) (20A) (12) (19B) (1) (9) (2) (11A) (19A(3)(4)(5)) (19B(10)).

French Oceania - (20A) (7A) (1) (9) (2C) (2A) (12)
French Sudan - (7A) (13) (23A) (18B) (21A) (20A) (1) (9) (2) (25B) (25A)
French West Africa - (13) (19A) (19B) (1) (9) (2) (24) (25A) (25B)

Galapagos Is. - (1) (9) (2)
Gambia - (13) (14) (23A) (18B) (21A) (20A) (1) (9) (2) (25B) (19A(3))
(19B(12))

Georgia - (11A) (13) (15A) (23A) (1) (2)
Germany - (15A) (23A) (23B) (22)
Gibraltar - (5) (11A) (11B) (13) (15B) (16B) (23B) (1) (9) (2)
Gilbert Is. and Ellice Is. - (5) (20A) (1) (9) (2) (7A)
Goa (Port. India) - (4) (5) (7A) (11A) (13) (14) (15A) (16E) (23B)

(1) (9) (2)
Gold Coast - (5) (7A) (7B) (7C) (13) (14) (15A) (23B) (18A) (18B) (21A)
(20A) (1) (9) (2) (24) (25A)

Gough Is. - (1) (9) (2)
Graham Island - (8)
Great Britain and N. Ireland - (15A) (23B)
Greece - (5) (11A) (13) (23A) (16B) (17) (1) (9) (2) (24)

Greenland - (8)
Grenada - (11C) (18B) (20A) (1) (9) (2)
Guadeloupe and Dep. - (5) (7A) (11C) (13) (18B) (20A) (1) (9) (2) (20B)
Guam - (1) (9) (2)

Guatemala - (5) (7A) (7C) (11C) (13) (20B) (23A) (21C) (20A) (1) (9)
(2) (4) (14)
Guiana, British - (5) (7A) (10) (11C) (13) (14) (18B) (21C) (20A) (12)
(1) (9) (2) (20B)

Guiana, Netherlands - (5) (7A) (10) (11C) (13) (14) (18B) (21C) (20A)
(12) (1) (9) (2) (20B)
Guiana, French - (5) (7A) (10) (11C) (13) (14) (23B) (18B) (21C) (20A)
(12) (1) (9) (2) (20B)

Guinea, French - (5) (7A) (7C) (13) (14) (15A) (23B) (18A) (18B) (21A)
(24) (1) (2) (9) (25A)
Guinea, Portuguese - (5) (7A) (13) (14) (15A) (23B) (18B) (21A) (20A)
(24) (1) (9) (2) (25A)

Guinea, Spanish - (7A) (13) (14) (15A) (23B) (18B) (21A) (20A) (24)
(1) (9) (2) (25A)

Haiti - (5) (7A) (11C) (13) (15B) (23B) (18B) (20A) (1) (9) (2) (20B)
Hasa - (11A) (13) (18A) (20C) (23B) (5) (1) (9) (2)
Hawaii - (23B) (1) (9) (2)
Hejaz - (18A) (20C) (1) (9) (2)
Holland - (23B)
Honduras - (7A) (7C) (10) (11C) (13) (20B) (23A) (20A) (1) (9) (2)
Hong Kong - (4) (5) (7A) (11A) (13) (15A) (18C) (23B) (20A) (1) (9) (2)
Hungary - (7A) (23)

Iceland - (8)
Ifni - (5) (7A) (13) (14) (15A) (15B) (16B) (23A) (1) (9) (2)
India - (4) (5) (7A) (10) (11A) (13) (14) (15A) (16E) (20A) (12) (2)
(19A(3)(4)(5)) (1) (9) (19B(10)(11)(12)) (17D) (17A)

Inini - (5) (7A) (11C) (13) (14) (18B) (21C) (23B) (20A) (1) (9) (2)
Iran (Persia) - (4) (11A) (11B) (13) (5) (15A) (23B) (18A) (1) (9)
(2) (17)

Iraq - (11A) (11B) (5) (4) (13) (14) (15A) (20C) (23B) (16B) (18A)
(17) (1) (9) (2)

Ireland (Irish Free State) - (15A) (23B)
Isle of Man

Italian East Africa - (7A) (11A) (11B) (5) (13) (15A) (15B) (19A) (19B)
(21A) (14) (23A) (23B) (18A) (20A) (1) (9) (2) (17A)

Italy - (5) (11A) (13) (15A) (23B) (16B) (17) (1) (9) (2) (24)
Ivory Coast - (5) (7A) (7B) (7C) (13) (23A) (23B) (18A) (18B) (21A)
(20A) (1) (9) (2) (25A) (24)

Jamaica - (5) (7A) (13) (15B) (20A) (1) (9) (2)
Japan (proper) - (4) (5) (7A) (10) (13) (15A) (23A) (23D) (18C) (22)
(12) (1) (9) (2) (24)

Japanese Empire - (see separate countries)
Java and Madura - (5) (7A) (13) (14) (20A) (1) (9) (2)

Karafuto
Karelia - (23A) (8)
Karikal - (4) (5) (7A) (11A) (14) (15A) (16E) (23B) (20A) (1) (9) (2)
Kazak - (11A) (13) (14) (15A) (15B) (23A)
Kenya - (7A) (11A) (13) (15B) (18A) (21B) (20A) (14) (17A) (1) (9)
(2) (25A)

Kirguelen Is.
Kirghiz - (11A) (13) (14) (15A) (15B) (23A) (1) (2)
Korea - (see Chosen)
Kuwait - (4) (11A) (13) (14) (18A) (20C) (23B) (1) (9) (2)
Kwangchowan - (4) (5) (7A) (11A) (13) (15A) (23B) (20A) (1) (9) (2)
Kwantung - (4) (5) (11A) (13) (14) (23B) (1) (9) (2)

Labrador - (8)
Labuan - (5) (7A) (13) (23B) (20A) (1) (9) (2)
Laccadive Is. - (1) (9) (2)
Laos - (4) (5) (7A) (13) (14) (15A) (23B) (20A) (1) (9) (2)
Latvia - (15A) (23A) (8)
Lebanon - (5) (11A) (11B) (13) (14) (23A) (23B) (16B) (18A) (23B) (17)
(21A)

Leeward Is. - (5) (7A) (11C) (13) (18B) (23B) (20A) (1) (9) (2) (11A)
(15B)
Liberia - (5) (7A) (7B) (7C) (13) (14) (23B) (18A) (21A) (20A) (1) (9)
(2) (18B) (24) (25A) (25B)
Libya - (5) (7A) (10) (11A) (11B) (13) (14) (17) (23A) (23B) (16B)
(18A) (20A) (1) (9) (2) (24)

Liechtenstein - (22)
Lithuania - (15A) (8)
Luxembourg - (15A) (22) (23A)

Macau - (4) (5) (7A) (11A) (13) (15A) (18C) (23B) (20A) (1) (9) (2)
 Mackenzie District - (16A)
 Madagascar - (7A) (13) (14) (15B) (23A) (23B) (18A) (18B) (12) (1)
 (9) (2) (5)
 Madeira Is. - (5) (1) (9) (2)
 Maldive Is. - (1) (9)
 Malta and Gozo - (5) (13) (1) (9) (2)
 Manchukuo - (4) (5) (11A) (13) (14) (23B)
 Manitoba - (22) (8)
 Marianas - (1)
 Maritime Provinces - (22) (8)
 Marshall Is. - (5) (20A) (1) (9)
 Martinique - (5) (7A) (11C) (13) (18B) (20A) (1) (9) (2)
 Mauritania - (5) (7A) (13) (15A) (11B) (23A) (23B) (18B) (20A) (1) (9)
 (2) (24) (14) (21)
 Mauritius - (7A) (1) (9) (2) (10) (18) (12)
 Mesopotamia - (see Iraq)
 Mexico - (4) (5) (7A) (7C) (10) (11A) (11C) (14) (13) (15B) (22A) (23B)
 (21C) (20A) (20B) (19B) (1) (9) (2)
 Midway Is. - (1) (9) (2)
 Miquelon and St. Pierre
 Monaco - (13) (16B) (23B)
 Mongolia - (15A)
 Montserrat - (5) (7A) (11C) (13) (18B) (23B) (20A) (1) (9) (2)
 Morocco (Sultanate) - (5) (20A) (20D) (7A) (11A) (11B) (13) (12) (14)
 (15A) (15B) (17) (23A) (23B) (16B) (18A) (1) (9) (2) (24)
 Morocco (Spanish) - (5) (7A) (10) (11A) (11B) (13) (12) (14) (15A) (15B)
 (17) (23A) (16B) (18A) (1) (9) (2) (24)
 Mozambique - (7A) (13) (14) (15B) (16C) (18A) (18B) (21B) (1) (9) (2)
 Nansen Land, Fridtjof
 Natal - (6) (13) (14) (16C) (18B) (1) (9) (2) (5) (23) (10) (12)
 Nauru - (5) (20A) (12) (1) (9) (2)
 Mejd - (7A) (11B) (20C) (23B) (1) (9) (2)
 Nepal - (5) (11A) (1) (9) (2)
 Netherlands - (23B) (20D)
 Netherlands Indies - (5) (1) (9) (2) (4) (7A) (13) (14) (18C) (23B)
 (20A) (23D) (24) (10) (12)
 Nevis - (5) (7A) (11C) (13) (18B) (23B) (20A) (1) (9) (2)
 New Brunswick - (22) (8)
 New Caledonia - (5) (7A) (14) (20A) (12) (1) (9) (2) (11B)
 Newfoundland - (8)
 New Guinea, Netherlands - (7A) (10) (13) (20A) (1) (9) (2) (12) (23B)
 (23D) (4) (17C)
 New Guinea, Ter. of - (5) (7A) (10) (13) (20A) (1) (9) (2) (12) (23B)
 (23D) (4) (17C)
 New Hebrides Is. - (5) (7A) (13) (20A) (1) (9) (2)
 New South Wales and Canberra - (5) (2D) (6) (7A) (15A) (15B) (23D) (1)
 (9) (2)
 New Zealand - (5) (6) (15A) (2D)
 Nicaragua - (5) (7A) (7C) (11C) (13) (20A) (24) (1) (9) (2) (20B)

Nicobar Is. - (7A) (13) (23B) (20A) (1) (9) (2)
 Niger - (7A) (13) (15A) (23A) (18B) (21A) (20A) (1) (9) (2) (25B)
 Nigeria - (5) (7A) (7B) (7C) (11B) (12) (13) (14) (15A) (19A) (19B)
 (23A) (23B) (18A) (18B) (21A) (20A) (1) (9) (2) (24)
 (25A)
 Non-Federated Malay States - (4) (10) (13) (20D) (23B) (23D) (5)
 (7A) (14) (20A) (1) (9) (2)
 North America - (see separate countries)
 Northern Ireland - (15A)
 Northern Territory - (5) (7A) (13) (20A) (1) (9) (2)
 Northwest Territories - (8)
 Norway - (15A) (22) (8)
 Nova Scotia
 Nyasaland - (7A) (13) (15B) (16C) (18A) (21B) (1) (9) (2) (10) (20A)
 Oceania - (see separate islands)
 Oman - (7A) (11B) (20C) (1) (9) (2)
 Oman, Trucial - (7A) (1) (9) (2)
 Ontario - (22) (8)
 Orange Free State - (6) (13) (14) (16C) (20A) (23A) (1) (9) (2)
 Palau (Pelew) Is. - (5) (20A) (1) (9) (2)
 Palestine - (5) (13) (14) (15A) (15B) (23B) (16B) (18A) (20A) (17)
 (1) (9) (2) (11) (10) (24)
 Panama - (5) (11C) (13) (15B) (21C) (20A) (20B) (24B) (19A(2)) (19B(6)(8))
 (1) (9) (2) (17B)
 Papua Territory - (5) (7A) (13) (14) (23B) (20A) (1) (9) (2) (17C)
 Paraguay - (11A) (11C) (13) (20A) (24B) (14) (1) (9) (2) (14) (25B) (24)
 Persia (see Iran) - (1) (9) (2)
 Peru - (3) (7C) (10) (11C) (13) (14) (15A) (20B) (23A) (23B) (21C)
 (1) (9) (2) (25A)
 Philippine Is. - (4) (5) (7A) (10) (13) (23B) (18C) (20A) (12) (1)
 (9) (2)
 Pitcairn Island - (5) (1) (9) (2)
 Poland - (15A) (23A) (8)
 Polar Regions - (see Arctic and Antarctic Regions)
 Pondichery - (4) (5) (7A) (11A) (14) (15A) (16E) (23B) (20A) (1) (9)
 (2)
 Portugal - (23B) (16B) (1) (9) (2) (13) (15B) (5) (17) (11A) (18A)
 Pribilof Is. - (8)
 Prince Edward Is. - (8)
 Principe and Sao Thome - (1) (9) (2)
 Puerto Rico - (5) (7A) (10) (11C) (13) (15B) (23B) (18B) (20A) (1)
 (9) (2) (20B)
 Qatar - (11A) (13) (18A) (20C) (23B) (5) (1) (9) (2)
 Quebec - (22) (8)
 Queensland - (5) (6) (7A) (10) (13) (15A) (15B) (23C) (23B) (20A) (1)
 (9) (2) (10)
 Reunion - (7A) (1) (9) (2C) (13) (12) (18) (2A)

Rhodesia, Northern - (7A) (13) (16C) (18A) (21B) (1) (9) (2) (25A)
Rhodesia, Southern - (7A) (13) (23B) (16C) (18A) (1) (9) (2) (15)
(21B) (20A) (10)
Rio de Oro and Adras - (13) (23B) (1) (9) (2) (24)
Roumania - (15A) (23A) (16B) (1) (2)
Ross Dependency - (8)

St. Helena - (1) (9) (2)
St. Kitts and Nevis - (5) (7A) (11C) (13) (18B) (23B) (20A) (1) (9)
(2)
St. Lucia Is. - (5) (11C) (13) (18B) (20A) (7A) (23) (1) (9) (2)
St. Vincent Is. - (11C) (18B) (20A) (1) (9) (2)
Salvador - (11C) (23A) (16A) (20A) (1) (9) (2) (13) (20B)
Samoa - (5) (7A) (20A) (1) (9) (2) (12)
Samoa, Western - (5) (7A) (20A) (1) (9) (2)
San Marino - (5) (11A) (13) (15A) (16B) (23A) (1) (2)
Sao Thome - (1) (9)
Sarawak - (5) (7A) (13) (23B) (20A) (1) (9) (17C)
Sardinia - (5) (11A) (13) (16B) (1) (9) (2)
Saskatchewan - (14) (16A) (22) (8)
Saudi Arabia - (7A) (11B) (20C) (23B) (1) (9) (2)
Scotland - (15A) (24)
Senegal - (7A) (7C) (13) (15A) (23A) (18B) (21A) (20A) (1) (9) (2)
(14) (18A) (24) (25A) (19B(12)) (19A(3))
Seychelles - (1) (9) (2) (10) (12)
Shetland Is.
Siam - (see Thailand)
Sicily - (15A) (16B) (1) (9) (2)
Sierra Leone and Prot. - (5) (7A) (7C) (13) (14) (18A) (21A) (20A) (1)
(9) (2) (24) (25A)
Sinkiang - (11A) (11B) (14) (15A) (1) (2)
Slovakia - (23A) (22) (1) (2)
Socotra - (1) (9)
Solomon Is. (New Guinea) - (5) (7A) (13) (20A) (1) (9) (2) (10) (12)
Solomon Is. (Gr. Britain) - (5) (7A) (13) (20A) (1) (9) (2) (10) (12)
Somaliland, British - (7A) (11A) (13) (14) (15B) (23A) (18A) (17) (12)
(1) (9) (2)
Somaliland, French - (7A) (11A) (15B) (23A) (18A) (12) (1) (9) (2) (17A)
Somaliland, Italian - (7A) (11A) (13) (15B) (23A) (18A) (20A) (12) (1)
(9) (2) (17A)
South America - (see separate countries)
South Australia - (1) (9)
South Georgia
South Orkney Is. - (8)
South Shetlands - (8)
Southwest Africa - (14) (23A) (1) (9) (2)
Soviet Union - (11A) (13) (14) (15A) (15B) (23A) (23B) (22) (8)
Soviet Union in Europe - (11A) (13) (15A) (22) (23A) (23B) (8)
Spain - (5) (7A) (11A) (11B) (15B) (23A) (23B) (16B) (17) (1) (9) (2)
(13) (24)

Spitsbergen - (8) (see Svalbard)
Straits Settlements - (4) (5) (7A) (13) (14) (23D) (23B) (20A) (1)
(9) (2)
Sudan - (7A) (1) (9) (2) (15) (13) (11A) (21) (10) (18B) (12)
Sumatra - (5) (7A) (10) (13) (14) (23B) (23D) (20A) (1) (9) (2) (17C)
Svalbard - (8)
Swaziland - (6) (7A) (13) (14) (16C) (18A) (1) (9) (2) (12) (18B)
Sweden - (22) (8)
Switzerland
Syria and Lebanon (French) - (5) (11B) (13) (14) (15A) (15B) (20C)
(23B) (16B) (18A) (17) (1) (9) (2) (24)
Syria (Republic) - (5) (11B) (13) (14) (15A) (15B) (20C) (23B) (16B)
(18A) (17) (1) (9) (2) (24)

Tadzhik - (11A) (11B) (13) (15A) (15B) (23A) (1) (2)
Taiwan - (see Formosa)
Tanganyika Ter. - (7A) (7C) (13) (14) (15B) (19A) (19B) (10) (23A)
(16C) (18B) (21B) (20A) (1) (9) (2) (17A) (25A)
Tangier Zone - (5) (7A) (11A) (11B) (13) (14) (15A) (15B) (16B) (18A)
(23A) (20A) (1) (9) (2)
Tannu Tuva - (15A) (1) (2)
Tasmania - (6) (15A)
Thailand - (4) (5) (7A) (13) (14) (23B) (10) (12) (20A) (1) (9) (2)
(15A) (23D) (11A) (19A(3)(4)(5)) (19B(10))
Tibet - (1) (2)
Tierra del Fuego
Timor, Netherlands - (5) (7A) (13) (14) (20A) (1) (9) (2)
Timor, Portuguese - (5) (7A) (13) (14) (20A) (1) (9) (2) (17C)
Tobago - (11C) (18B) (20A) (1) (9) (2)
Togoland (Gold Coast) - (5) (7A) (7B) (7C) (13) (14) (15A) (23B) (18A)
(18B) (21A) (20A) (1) (9) (2) (24) (25A)
Togoland (French) - (5) (7A) (7B) (7C) (13) (14) (15A) (20D) (23B)
(18A) (18B) (21A) (20A) (1) (9) (2) (25A)
Tonga Is. - (20A) (1) (9) (2) (7A)
Tonkin - (4) (5) (7A) (11A) (13) (14) (15A) (23B) (20A) (1) (9) (2)
Transjordan - (5) (13) (15A) (15B) (23B) (16B) (18A) (1) (9) (2)
Transvaal - (6) (7A) (13) (14) (16C) (18A) (23A) (1) (9) (2) (23B)
Trinidad and Tobago - (5) (7A) (11C) (13) (18B) (20A) (1) (9) (2)
(10) (12)
Tristan da Cunha - (1) (2)
Tunisia - (5) (7A) (11A) (11B) (13) (14) (23A) (23B) (16B) (18A) (20A)
(1) (9) (2) (24)
Turkey - (5) (7A) (11A) (13) (15A) (16B) (20A) (22) (17) (1) (9) (2)
(12) (23) (24)
Turkmen - (11A) (11B) (13) (15A) (15B) (23A) (1) (9) (2)
Turks and Caicos Is. - (7A) (23B) (1) (2)

Uganda - (7A) (7C) (14) (15B) (23A) (18B) (20A) (1) (9) (2) (13) (21B)
(12) (10) (17E) (25B)
Ukraine - (11A) (13) (15A) (23A)

Union Is. - (5) (1) (9) (2)
 Un. of Soc. Sov. Republics - (11A) (13) (14) (15A) (15B) (23A) (23B) (22) (8)
 Un. of South Africa - (6) (7A) (10) (14) (23A) (23B) (16C) (18A) (18B) (1) (9) (2) (13) (5) (12) (14)
 Uruguay - (6) (11C) (15B) (21C) (20A) (1) (9) (2)
 Uzbek - (11A) (13) (15A) (15B) (23A) (1) (2)

 Venezuela - (5) (7A) (10) (11C) (13) (14) (15B) (18B) (20B) (21C) (20A) (12) (1) (9) (2) (25B)
 Victoria - (6) (15A) (15B) (23D)
 Virgin Is. (U.S.) - (5) (7A) (11A) (13) (15B) (18B) (23B) (20A) (1) (9) (2) (20B)
 Virgin Is. (British) - (5) (7A) (11A) (13) (15B) (18B) (23B) (20A) (1) (9) (2)

 Wake Is. - (1) (9) (2)
 Wales - (15A) (23B)
 Walvis Bay - (13) (14) (1) (9) (2)
 Western Australia - (1) (9) (2)
 West Indies - (5) (10) (1) (9) (2) (20A) (7A) (12) (18B) (23)
 White Russia - (13) (15A) (23A) (8)
 Windward Is. - (7A) (11C) (18B) (20A) (5) (13) (23) (1) (9) (2)

 Yemen - (7A) (11B) (20C) (23B) (1) (9) (2)
 Yugoslavia - (5) (11A) (13) (23B) (17) (1) (2)
 Yukon - (16A) (8)

 Zanzibar - (1) (9) (2) (13) (12) (18B)

PRECAUTIONS

1. General precautions against Intestinal Infections.
2. General precautions against:
 - (A) Skin infections
 - (B) Wound infections
 - (C) Venereal infections
 - (D) Eye infections
3. Specific precautions against Bartonellosis (Oroya fever, Verruga peruana).
4. Specific precautions against Cholera.
5. Specific precautions against Dengue (Breakbone Fever).
6. Specific precautions against Echinococcosis (Hydatid Disease).
7. Specific precautions against Filarial (Thread-Worm) Infestations.
 - (A) Bancroftosis (Filariasis).
 - (B) Loiasis (Calabar Swellings).
 - (C) Onchocerciasis.
8. Specific precautions against Frost-bite, Freezing and Upper Respiratory Infections.
9. Specific precautions against Heat Cramps, Heat Exhaustion and Heat Stroke.
10. Specific precautions against Hookworm Disease.
11. Specific precautions against Leishmaniasis.
 - (A) Kala-azar.
 - (B) Oriental Sore.
 - (C) Espundia.
12. Specific precautions against Leprosy.
13. Specific precautions against Malaria.
14. Specific precautions against Plague.
15. Specific precautions against the Relapsing Fevers.
 - (A) Louse-borne Relapsing Fever.
 - (B) Tick-borne Relapsing Fever.
16. Specific precautions against the Rickettsial Diseases of the Rocky Mountain Spotted Fever Type.
 - (A) Rocky Mountain Spotted Fever.
 - (B) Boutonneuse Fever.
 - (C) South African Tick-bite Fever.
 - (D) Sao Paulo Typhus.
 - (E) Indian Tick Typhus.
17. Specific precautions against the Sandfly Fevers.
 - (A) Pappataci or Phlebotomus Fever.
 - (B) Panama Six-Day Fever.
 - (C) Van de Scheer Five-Day Fever.
 - (D) Indian Seven-Day Fever.
 - (E) Bwamba Fever.
18. Specific precautions against Schistosomiasis.
 - (A) Urinary Schistosomiasis.
 - (B) Intestinal Schistosomiasis.
 - (C) Biliary Schistosomiasis.

19. Specific precautions against Snake-bite Poisoning.
20. Specific precautions against the Tropical Treponematoses.
 - (A) Yaws.
 - (B) Pinta.
 - (C) Bejel.
21. Specific precautions against Trypanosomiasis.
 - (A) West African Sleeping Sickness.
 - (B) East African Sleeping Sickness.
 - (C) Chagas' Disease.
22. Specific precautions against Tularemia.
23. Specific precautions against Typhus Fever and related Rickettsial Diseases.
 - (A) Louse-borne, Epidemic Typhus.
 - (B) Flea-borne, Endemic Typhus.
 - (C) Tick-borne, Q-Fever.
 - (D) Mite-borne, Japanese River Fever (Tsutsugamushi).
24. Specific precautions against Weil's Disease (Leptospirosis Jaundice).
25. Specific precautions against Yellow Fever.
 - (A) Classical Yellow Fever.
 - (B) Jungle Yellow Fever.

1. General precautions against Intestinal Infections.

These include Amoebic and Bacillary Dysentery, Cholera, Paratyphoid Fevers A and B, Typhoid Fever, Undulant Fever, Dracontiasis (Guinea-Worm Infestations), Hookworm disease, etc.

The causative agents of all these diseases commonly get into the intestinal tract by being swallowed. The precautions are therefore those regarding food and drink.

PRECAUTIONS REGARDING WATER

Since the pollution of soil by human feces is common in nearly all tropical and subtropical areas, the surface water and much of the ground water in those areas must be generally considered polluted. Therefore, to be safe for human consumption all water in such regions must be treated in some way. The safest methods of water treatment are (1) distillation or boiling for at least three minutes; (2) sand filtration by accepted methods followed by chlorination with a residual chlorine of at least 0.5 parts of chlorine per million (as done by British or U. S. military personnel). These treatments rid the water completely of the bacilli capable of causing typhoid fever, paratyphoid fever, bacillary dysentery and common diarrhea, of the dysentery amoeba and its cysts, of the vibrio capable of causing cholera, of all parasites capable of infesting the human intestine.

The next safest method of water treatment is chlorination without preliminary filtration. This method is entirely satisfactory except in areas where amoebic dysentery is common (the cysts of the amoebae of dysentery are not surely killed by chlorine even at dilutions of one part per million though filtration completely removes them). The technique of this method is as follows: (1) A "stock solution" is made up by dissolving a 1/2 gram ampule of H. T. H. or Perchloron (Grade A calcium hypochlorite), or 1 gram ampule of ordinary calcium hypochlorite or 1 teaspoonful of freshly opened chlorinated lime in 1 quart of water (ampules should be opened under water to prevent wasting of contents); (2) this stock solution will preserve its strength for as long as 4 days if it is kept in a tight-stoppered glass bottle out of contact with metals; (3) add stock solution to water, 9 drops to 1 quart, 36 drops to 1 gallon, 6 teaspoonfuls to 10 gallons; (4) let chlorinated water stand at least 30 minutes before use. Another acceptable technique of chlorination avoids the necessity of the stock solution and simply demands the use of Halazone tablets in the proportion of 4 mgm. per liter of water. If preserved in amber bottles, Halazone tablets may be expected to maintain their disinfecting efficiency at temperatures as high as 90°F. almost unchanged for about 5 months. Temperatures as high as 104°F. to 122°F. will reduce the efficiency of these tablets by about one-half in 3 months. One or two tablets to a canteen of water should be sufficient except in the presence of extremely heavy loads of organic material or the cysts of the dysentery amoeba.

PRECAUTIONS REGARDING MILK

It is extremely rare in tropical and subtropical areas to find milk protected by tuberculin testing of the herds, inspection of the dairies, pasteurization and subsequent refrigeration. Raw milk can therefore be but rarely used in such regions with safety and only the following are recommended: Canned evaporated milk, powdered milk prepared with boiled water, milk boiled 3 to 5 minutes immediately before use. Goat's milk, it should be remembered, is even more apt than cow's milk to convey undulant fever if used raw.

PRECAUTIONS REGARDING OTHER BEVERAGES

Generally safe are (1) tea and coffee (when the water is boiled in the preparation); (2) beers and wines; (3) undiluted fruit juices (if carefully prepared by oneself from thick-skinned fruits, scalding the skins before juicing).

Generally unsafe are (1) non-carbonated soft drinks such as orangeade; (2) beverages containing ice (which is but little less dangerous than the water from which it is produced).

More often safe but not surely so, are the locally produced carbonated beverages and the locally bottled drinking water.

PRECAUTIONS REGARDING FOODS

In general only well cooked foods, served while still hot and not re-cooked are to be recommended, though there are a few exceptions to that rule.

(1) Vegetables must be assumed to have been grown in soil fertilized with human excreta as that is such a common practice. Therefore, no raw vegetables in salad or other forms can be safely used. Dipping of raw vegetables in potassium permanganate does not disinfect them. All vegetables should be thoroughly washed, thoroughly cooked and served promptly after cooking.

(2) Fruits, if thin-skinned or with their skin broken, should be used only after cooking. Thick-skinned fruits should be dipped in scalding water and peeled; they are then safe for use provided they are not mixed with raw, leafy vegetables in salads or contaminated by dirty hands.

(3) Bread and crackers if not contaminated by dirty hands, flies, mice, etc. may be considered generally safe.

(4) Meat should be freshly killed or properly preserved, thoroughly cooked through, and served while still hot.

(5) Ice cream and the various ices as well as butter are no safer, if locally produced, than the local milk. They should therefore be avoided unless made from properly pasteurized or cooked milk or cream.

(6) Lunches which are to be carried should, in hot weather, consist of canned meats, bread or crackers, thick-skinned fruits, etc. rather than sandwiches previously prepared with fillings liable to act as growth media for bacteria in a warm, moist atmosphere.

Triple Typhoid Vaccine. Every traveler in tropical or subtropical areas should protect himself with typhoid-paratyphoid vaccine given subcutaneously in three doses 7 days apart 1/2 cc., 1 cc. and 1 cc. A "booster dose" of 0.1 cc. of this vaccine should be taken intracutaneously annually and in case of marked exposure.

2. General precautions against Skin Infections, Wound Infections, Venereal Infections, and Eye Infections. This includes (a) Impetigo, Boils, the various fungus ("ringworm") infections; (b) Staphylococcus infection of wounds ("festered wounds"), streptococcus infection of wounds, and tetanus bacillus infection of wounds ("lock jaw"); (c) syphilis, gonorrhea, chancroid (soft chancre), lymphogranuloma inguinale (tropical bubo) and granuloma venereum; and (d) trachoma and chronic conjunctivitis (folliculosis).

Precautions for Skin Infections include: The avoidance of barbers who do not have adequate facilities for disinfecting their equipment or who fail to take reasonable sanitary precautions; the use of towels and underwear which are ironed rather than merely rough-dried; the use of sandals in baths and locker-rooms to prevent the contact of bare feet with fungus-contaminated floors; the use of Navy foot powder; the use of 70% grain alcohol (or a lotion equally disinfectant) on the face after shaving; if the skin is unavoidably exposed to fungus infections use a 5% solution of salicylic acid in alcohol sparingly on the feet, a 15% solution of sodium thiosulphate in water on the body.

Precautions for Wound Infections include: Avoid picking or opening any pimples or pustules with other than a sterile needle or instrument; treat all cuts and minor wounds by cleansing with clean water and soap, applying 2% tincture of iodine, tincture of merthiolate or a 1 to 1,000 solution of proflavine monohydrochloride in water or 15% alcohol and covering with sterile gauze; dirty wounds that cannot be thoroughly cleansed or wounds contaminated with road dirt, stable refuse, fertilized soil or manure should receive a physician's care promptly, the wound in the meantime being powdered with sulfanilamide powder from a sterile envelope; immunization with tetanus toxoid involving (1) two intramuscular injections of alum-precipitated tetanus toxoid of 1/2 cc. each, 4 to 8 weeks apart; (2) a "booster dose" of 1/2 cc. intramuscularly after 1 year and every 4 years thereafter; (3) a "booster dose" of 1/2 cc. at any time a severe or contaminated wound occurs.

Precautions for Venereal Infections: The spread of venereal infections is very largely the result of sexual intercourse and sexual continence is therefore the chief precaution (chemical prophylaxis if prompt and thorough will markedly reduce but not obviate the chances of infection). In some tropical regions, however, up to 90% of the native population may have one or more of these diseases. Under such circumstances the following precautions are important: The avoidance of use of any cup, glass, fork, spoon, etc. which might carry syphilitic spirochetes from the mucous patches in the mouth of a case with secondary syphilis; the protection of all open wounds from contamination by flies or other insects; the avoidance of rubbing the eyes with the hands when engaged in handling articles in common with ignorant or careless persons who are suffering from active gonorrhea.

Precautions for Eye Infections include: Avoidance of rubbing the eyes with the hands when the hands may be infected with trachoma virus or other organisms as the result of handling objects also handled by natives suffering from trachoma or folliculosis; the protection of eyes from excessive sun glare, excessive pollen irritation, and fly and insect contamination by wearing goggles when conditions warrant.

3. Specific precautions against Bartonellosis (Oroya Fever, Verruga peruana).

The causative agent is the Bartonella bacilliformis which is commonly transmitted by the bite of sandflies of the genus, Phlebotomus, principally at night, from January to April. Native dogs suffering from verruga peruana may serve as the source from which the sandflies receive their infection.

Precautions include: Staying out of areas known to be infected, especially at night; where feasible, screening with cheese cloth (Phlebotomus can pass through 18-mesh screen); use of effective insect repellents (Insect Repellent, liquid, may be obtained from U. S. Naval Medical Supply Depots in 2 oz. bottles under Stock No. S13-450). Directions for use of these repellents: Shake about 12 drops into one hand; rub hands together, then apply in a thin layer by rubbing until all areas are covered. Apply in a similar manner on clothing where insects are biting through. Apply with caution around eyes and mouth. If sleeping quarters can be found on the second floor or above, but few sandflies will be found to fly that high.

4. Specific precautions against Cholera.

The causative agent is the Vibrio comma. In addition to precautions regarding food and drink as in 1, immunization with cholera vaccine should be obtained whenever a visit to or a sojourn in a cholera-infected area is contemplated. The initial dose of this vaccine is 1/2 cc., the second dose, after 7-10 days, is 1 cc. A "booster dose" of

1 cc. is taken every 4 to 6 months as long as one stays in the hyperendemic area. The protection is only relative.

5. Specific precautions against Dengue (Breakbone Fever).

The causative agent is the dengue virus carried principally by the mosquito Aedes aegypti, to some extent by the Aedes albopictus. These mosquitoes bite during the day but usually not in bright sunlight; they are house breeders and are not commonly found far from human habitation.

Precautions include: Screening living quarters and sleeping under a mosquito bar; use of head nets and gloves along with other mosquito-proof clothing covering the entire body; when required to be exposed, using mosquito repellents on all exposed parts at regular intervals (Insect Repellent, liquid, may be obtained from U. S. Naval Medical Supply Depots in 2 oz. bottles under Stock No. S13-450). Directions are as follows: Shake about 12 drops into one hand; rub hands together, then apply in a thin layer by rubbing until all areas are covered; apply in a similar manner on clothing where insects are biting through; apply with caution around eyes and mouth; about 10 cc. of the insect-repellent sprayed inside the shirt is very effective, lasting much longer than when simply used on exposed surfaces; disinsectization of all quarters at least twice a day. (Pyrethrum-freon insecticide aerosol, dispensed in metal cylinders with spray attachment, used 1 lb. of aerosol to every 150,000 ft.³ of space is effective for this purpose.)

6. Specific precautions against Echinococcus (Hydatid) Disease.

The infesting agents are the eggs of a minute tapeworm, Echinococcus granulosus, growing in the intestine of a dog. These eggs reach man's intestine through food or water contaminated by dog feces or through hands mouthed over by an infested dog. Once in the human digestive tract the eggs mature and hatch out into the embryos which penetrate the intestinal wall and pass as a rule to the liver.

Precautions: In infested areas avoid all contact with dogs; wash hands carefully before eating; and observe precautions under 1 regarding food and drink.

7. Specific precautions against Filarial Infestations.

There are three particularly dangerous forms of these threadworms each producing a different type of disorder. (A) Bancroftosis, is usually characterized by swollen lymph glands in the groin or axillae, later accompanied by marked swelling of the legs, arms or scrotum (elephantiasis) due to the disturbance of lymph flow. This form is transmitted by a number of varieties of mosquito. (B) Loiasis is

the result of the threadworm, Loa-loa, usually located in the fat under the loose skin on various parts of the body and there producing swellings occasionally as large as a hen's egg (Calabar swellings). This worm is transmitted by the blood-sucking mango fly (Chrysops) which bites only during daylight hours and preferably in the shade. (C) Onchocerciasis, is also characterized by the formation of tender nodules or tumors in the fat underneath the skin particularly of the head, shoulders and trunk, but in this disease the microfilariae are apt also to invade the orbit and produce inflammation and impairment of vision. The method of transmission is by the bite of the black gnat, Simulium damnosum, S. metallicum and others.

Precautions against Bancroftosis include: Screening living quarters and sleeping under a mosquito bar; the use of head nets and gloves along with other mosquito-proof clothing covering the entire body; when required to be exposed, using mosquito-repellents over all exposed parts at regular intervals (Insect Repellent, liquid, may be obtained from U. S. Naval Medical Supply Depots in 2 oz. bottles under Stock No. S13-450). Directions include: Shake about 12 drops into one hand; rub hands together; then apply in a thin layer by rubbing until all areas are covered; apply in a similar manner on clothing where insects are biting through; apply with caution around eyes and mouth; about 10 c.c. of the repellent sprayed inside the shirt is very effective, lasting much longer than when simply used on exposed surfaces; disinsectionization of all quarters at least twice a day. (Pyrethrum-freon insecticide aerosol dispensed in metal cylinders with spray attachment, if used 1 lb. of aerosol to every 150,000 ft.³ of space is effective for this purpose).

Precautions against Loiasis include: The wearing of fly-proof clothing; the avoiding of shaded areas along stream banks where Chrysops abound; the use of repellents such as liquid insect repellent Stock No. S13-450.

Precautions against Onchocerciasis include: The wearing of gnat-proof clothing and veils; the use of smoke smudges to keep gnats away from an encampment; the use of the repellents such as liquid insect repellent Stock No. S13-450. These adult gnats bite only during daylight.

8. Specific precautions against Frost-bite and Freezing, and Upper Respiratory Infections.

The obvious precaution is to wear sufficient warm, dry clothing to avoid excessive chilling. To this precaution should be added: Avoid any constriction of circulation by tight-fitting shoes, garters, bands, etc.; stimulate metabolism by moderate physical activity; avoid both alcohol and tobacco immediately before the period of exposure to cold.

The acute upper respiratory infections, including the common

cold, catarrhal fever, influenza and pneumonia (lobar, broncho, and atypical), tend to occur in epidemic proportions during the cold, dark period of the year in all areas north of 40° North Latitude and all areas South of 40° South Latitude. The chief micro-organisms involved in these infections are apparently cold viruses, Influenza A virus, Influenza B virus, staphylococci, streptococci, pneumococci, Influenza Bacillus, cocci of the micrococcus catarrhalis group, diphtheroid bacilli. Precautions, which can be only relatively effective include: The use of a diet rich in vitamins and calcium and poor in sugars; the maintenance of indoor temperatures between 65° and 70°F.; the avoidance of crowds in epidemic periods; the avoidance of excessive fatigue in epidemic periods; the prevention of mechanical transfer of infection to mouth and nose by keeping hands from the mouth and nose and washing hands immediately before handling food; avoidance of contact as far as possible with obvious cases of upper respiratory infection.

9. Specific precautions against Heat Cramps, Heat Exhaustion and Heat Stroke.

Exposure to an atmosphere with high temperature particularly when associated with high humidity may give rise to (a) heat exhaustion, characterized by weakness, dizziness, pallor, excessive sweating, fast pulse and feeling of impending collapse; (b) heat stroke characterized by headache, dizziness, nausea, a dry, hot, flushed skin, a temperature mounting at times to 109°F. or more, unconsciousness; (c) heat cramps characterized by painful spasms of muscles particularly of the legs, arms and abdominal wall. These symptoms are largely the result of inability of the body to decimate its heat rapidly enough by the process of sweating (decimation of heat by radiation being impossible because of the high temperature of the atmosphere), and the loss of excessive amounts of salt from the body due to the large volume of sweat excreted. The ability to decimate heat efficiently by sweating can be definitely developed by training and acclimatization. Apparently about 80 percent of the improvement in the response to high temperatures is ordinarily obtained in the first 7 days of exposure to these temperatures.

Precautions include: (1) the provision of a drinking water ration of at least 2 gallons a day; (2) the heavy salting of meals; (3) the salting of the drinking water, 5 grams of sodium chloride to the gallon of water, when desired; (4) the avoidance of alcoholic beverages and meat in large quantities; (5) the avoidance as far as practicable of arduous physical labor in the direct sunlight in the heat of the day; (6) the protection of the head and back of the neck from direct sunlight by the use of a helmet; (7) the use of loose-fitting, open-necked, loose-meshed clothing; (8) where large additional amounts of salt are required enteric-coated salt tablets may be taken, preferably immediately after meals.

10. Specific precautions against Hookworm.

The hookworm, about the size of a victrola needle, lays its eggs in the bowel of man or in certain instances the dog. Feces containing these eggs, if deposited on sandy soil in a warm climate will hatch into larvae which in turn may penetrate the skin of another person if the skin is exposed bare to the soil. Larvae may also contaminate water, vegetables and other foods. This infestation is very widely distributed through the tropical and subtropical areas of the world. Only those areas are marked with the (10) that have large numbers of hookworm cases.

Precautions include: The avoidance of contact of the bare skin with polluted soil, the observance of general precautions regarding food and drink as in 1.

11. Specific precautions against Leishmaniasis.

This disease occurs in three forms: (A) Visceral Leishmaniasis (kala-azar) caused by the Leishmania donavani and accompanied by fever, enlargement of the spleen and diarrhea; (B) Old World Cutaneous Leishmaniasis (Oriental Sore), caused by the Leishmania tropica, starting as a small, itching papule and gradually spreading and ulcerating; (C) American, Mucocutaneous Leishmaniasis (Espundia) caused by the Leishmania brasiliensis starting as small papules on arms or margins of ears but eventually involving the region of the nose and mouth where extensive ulceration may occur. The main means of spread is apparently through the bite of the sandfly - genus Phlebotomus.

Precautions for Visceral Leishmaniasis (kala-azar) include: Avoidance of sandfly-infested areas if possible; the use of repellents (Insect Repellent, liquid, may be obtained from U. S. Naval Medical Supply Depots in 2 oz. bottles under Stock No. S13-450); the use of insecticide sprays such as Pyrethrum-freon insecticide aerosol in all quarters at least twice a day; avoidance of close contact with dogs and with human cases; food and drink precautions as in 1.

Precautions for Old World Cutaneous Leishmaniasis (Oriental Sore) and American, Mucocutaneous Leishmaniasis (Espundia) include: Avoidance of sandfly-infested areas, the use of repellents and insecticides as in (A), the avoidance of contact with cases. Directions for the use of the repellents are as follows: Shake about 12 drops into one hand; rub hands together, then apply in a thin layer by rubbing until all areas are covered; apply in a similar manner on clothing where insects are biting through; apply with caution around eyes and mouth. If sleeping quarters can be found on the second floor or above, but few sandflies will be found to fly that high.

12. Specific precautions against Leprosy.

The fear of contracting leprosy is commonly quite out of proportion to the actual danger. It is apparently only about as communi-

cable as syphilis and usually requires intimate and extended contact for spread. It is found all over the world but is particularly prevalent in those areas in Africa and Asia as indicated in the chart. Avoid close or extended contact with patients infected with leprosy.

13. Specific precautions against Malaria.

Though there are four types of plasmodia that cause malaria they are all carried from patient to patient by certain species of the anopheline mosquitoes. Our two means of prevention are protection from mosquitoes and chemical suppressive treatment.

Precautions against anopheles mosquitoes include: Screen all quarters with screening 18 to 20 mesh to the inch; sleep under a bed net of 20-mesh bobbinet even in screened quarters; stay in screened quarters if possible from 1/2 hour before sunset to 1/2 hour after sunrise (since anopheles is primarily a night feeder); disinsectize the screened quarters before retiring and upon rising by the use of Pyrethrum-freon insecticide aerosol (contained in a metal cylinder with sprayer attached); if practicable locate living quarters on high ground a mile, or preferably two miles, from swampy areas and from malarial infected native populations; if one's necessary activities take him outside of screened quarters at night, wear headnet, gloves and boots or use insect repellent. (To use; shake about 12 drops into one hand; rub hands together; apply in a thin layer by rubbing until all areas of exposed skin are covered; apply in a similar manner on clothing where insects are biting through; spray about 10 cc. inside the shirt; apply with caution around eyes and mouth).

Chemical suppressive treatment should be taken where local medical officers so advise or without medical advice in the presence of a highly malarious population.

The recommended suppressive treatment is as follows:

- (1) Take 0.1 gm. (1½ grains) of atabrine each night after dinner
- (2) if atabrine so used is not well tolerated quinine may be substituted (quinine sulfate 0.6 gm. (10 grains) daily after the evening meal);
- (3) in such cases if atabrine is resumed it should be started a few days before quinine is discontinued as overlapping of medication seems to be necessary to be effective;
- (4) if atabrine fails to suppress malaria, quinine should be substituted and vice versa; and
- (5) on the return to non-malarious territory, continue suppressive treatment for at least four weeks and until medical attention is constantly available.

14. Specific precautions against Plague.

The causative agent of plague is the Pasteurella pestis. It is present continuously as a natural disease of domestic rats, and also of certain wild rodents in various sections of the world. Rat fleas, the Xenopsylla cheopis and others, may convey the infection to man by first biting an infected rodent and then biting man. Precautions include: Avoiding contact with rats or wild rodents; avoiding contact with cases of pneumonic form of plague; avoidance of flea-infested quarters such as native huts and out buildings; disinsection of quarters with Pyrethrum-freon insecticide aerosol at least twice a day; vaccination with a plague vaccine supplied by the Medical Department of the U. S. Army and containing 2,000 million killed plague bacilli per c.c. (the first dose consists of 0.5 c.c., the second dose given after an interval of 7-10 days consists of 1.0 c.c., additional 1 c.c. doses are taken whenever a boost of the immunity is indicated); the use of a repellent, shaking about 12 drops into one hand, rubbing the hands together and then applying a thin layer over all exposed areas of the skin (using caution around eyes and mouth), applying in a similar manner on clothing where insects are biting through the use of 10% DDT powder. Where fleas infest the floors of quarters the rugs should be beaten and sunned out-of-doors and the floors treated with flaked naphthalene as follows: rugs are removed, flaked naphthalene is distributed over the floor in a thin coating, the room tightly closed over night; in the morning the naphthalene is swept up and may be used again.

15. Specific precautions against Relapsing Fever.

There are two main forms of this disease (A) that caused by the Borrelia recurrentis and transmitted from man to man by the Pediculus humanus (head and body louse) and possibly by the Phthirus pubis (crab or public louse) and (B) that caused by the Borrelia duttoni or closely related species and transmitted from rodents, monkeys and other mammals by soft ticks of the genus Ornithodoros (these ticks breed in the burrows and nests of wild rodents, in caves occupied by mammals and in native huts where they act similar to bedbugs, feeding on the human usually only 12 to 15 minutes and then returning to their shelter in cracks and crevices in the walls).

Precautions for Relapsing Fever caused by Borrelia recurrentis include: (1) frequent bathing and frequent change of underclothing; (2) frequent inspection of hair and clothing for lice and nits (eggs); (3) the wearing of louse-proof clothing in specially infested areas (this consists of a one-piece heavy muslin garment which goes over and covers the shoes and is tied about the neck; cotton gloves are sewed in the sleeves, a hood may be attached, all openings are closed by a broad strip of adhesive); (4) delousing of clothing, either by steam or by methyl bromide gas (which is available in ampules); (5) delousing of head, if nits or lice are found, by clipping hair short, applying vinegar of 10% acetic acid followed by a vigorous shampoo with hot soapy water

containing 25% kerosene; delousing of body and pubic region, rub 10% ammoniated mercury into affected areas, dust with talcum powder, and wash off with soap and hot water after 24-36 hours (if Merck's Cuprex is available it is perhaps most convenient for all delousing; it is rubbed into the affected areas, repeated after 10 minutes, allowed to remain on 1 to 4 hours; while hair is still moist use fine comb to remove dead pediculi and ova; follow by shampoo of soap and hot water; avoid proximity to fire); (6) the once-a-week use on the inside seams of all clothing of an insecticide powder obtainable from U. S. Naval Medical Supply Depots (it is labelled Insecticide Powder for Body Crawling Insects, its stock number is S13-451, it comes in 2 ounce, tin, shaker-top packages).

Precautions for Relapsing Fever caused by Borrelia duttoni include: (1) Avoid occupation of native quarters in infested area; (2) avoid entering caves inhabited by rodents, bats, etc.; (3) avoid, if possible, contact with tick-infested brush or undergrowth; (4) if required to travel through tick-infested brush or grass wear leggings or boots, search the body twice daily for ticks, if ticks are found apply kerosene to them and remove after a few minutes with tweezers applying 2% tincture of iodine to the bitten skin; spray on the outer clothing every 2 weeks 200 c.c. of a tick repellent such as Stock No. S13-450 or dust the belt line, inner seams of the clothing, socks and shoes and bedding with insecticide powder Stock No. S13-451 one or more times each week; (5) choose quarters that do not provide a nesting place for animals under the floor or in walls; (6) in questionable quarters spray cracks and crevices of bed with insect repellent Stock No. S13-450 or use insecticide powder since ticks have much the habits of bedbugs.

16. Specific precautions against Rocky Mountain Spotted Fever and Related Diseases.

There are five of these diseases all caused by the same organism, the Rickettsia rickettsii, and all transferred by ticks; (A) Rocky Mountain Spotted Fever by the Dermacentor andersoni and D. variabilis; (B) Boutonneuse Fever by the dog tick Rhipicephalus; (C) South African Tick-Bite Fever by larval ticks of the velde; (D) Sao Paulo Typhus by three species of Amblyomma; (E) Indian Tick Typhus by ticks the species of which is still undetermined.

The precautions include: Avoid tick-infested areas such as caves, native huts and tall grass along animal runs and bushes along streams or the edges of wooded areas; wear trousers tightly fitted inside leggings; boots or sock as ticks tend to crawl upward; remove ticks from body at least twice daily by applying kerosene and removing with tweezers applying 2% tincture of iodine* to the bite and washing hands thoroughly if the ticks have been handled; spray on the outer clothing every 2 weeks 200 c.c. of a tick repellent such as Stock No. S13-450 or dust the belt line, inner seams of the clothing, the socks,

*Or tincture of merthiolate.

shoes and bedding with Insecticide Powder for Body Crawling Insects. Stock No. S13-451 one or more times a week; choose quarters that do not provide a nesting place for animals under the floor or in the walls; in questionable quarters spray cracks and crevices of bed with insect repellent Stock No. S13-450 or use insecticide powder since ticks have much the habits of bedbugs; for Rocky Mountain Spotted Fever use a vaccine prepared by the Rocky Mountain Laboratory, U.S.P.H. Service, Hamilton, Montana and procurable from State Health Officers (the vaccine is given in 2 or 3 doses of 1 or 2 c.c. each spaced at intervals of 7 days, one or two "booster doses" should be given at the beginning of subsequent tick seasons).

17. Specific precautions against the Sandfly Fevers (Pappataci Fever, Panama Six-Day Fever, Van der Scheer Five-Day Fever, Indian Seven-Day Fever, Bwamba Fever).

These dengue-like fevers are caused by viruses which are spread from man to man by the bite of the sandfly Phlebotomus papatasi, P. minutus or P. perniciosus. These gnat-like flies or midges are small enough to penetrate ordinary mosquito netting and screening is only successful if done with 3 layers of mosquito netting or with muslin and this interferes seriously with the circulation of air. Precautions include: Avoid sanfly infested areas as far as possible; sleep in quarters one or more floors above the ground if possible; protect windows of sleeping room by an electric fan producing a counter current sufficient to discourage the sandfly's entrance; disinsectize quarters with Pyrethrum-freon insecticide aerosol on rising in the morning and before retiring at night; before going into sandfly areas and before retiring at night use a repellent. Directions for the use of the repellents are: Shake about 12 drops into one hand; rub hands together; then apply in a thin layer by rubbing until all areas are covered; apply in a similar manner on clothing where insects are biting through; apply with caution around eyes and mouth.

18. Specific precautions against Schistosomiasis (Blood-fluke infestation).

There are three important forms of this disease (A) that caused by the Schistosoma haematobium (which lays its eggs in the veins around the urinary bladder in man); (B) that caused by the Schistosoma mansoni (which lays its eggs in the veins about the colon and rectum); (C) that caused by the Schistosoma japonicum (which particularly tends to produce enlargement of the spleen and liver). In all three forms the eggs of the worm leave a human case, either in the feces or urine, reach fresh water and hatch into embryos which then enter snails. Eventually the larvae (cercariae) which are capable of penetrating man's skin emerge from the snail and infest the surrounding water.

Precautions: Avoid bathing in fresh water in infested areas; if exposed to infested water bathe thoroughly afterward with soap and

pure water; if one must enter infested water protect against the cercariae by wearing rubber boots.

19. Specific precautions against Snake-bite.

All poisonous snakes belong either to the family of the Colubridae or of the Viperidae of the Elapidae or of the Crotalidae. The chief poisonous snakes are:

(A) Producing venom particularly toxic to the nervous system.

- (1) Bead snake (Micrurus fulvius) Florida Coral Snake, U.S.
- (2) Sonoran Coral Snake (Micruroides euryxanthus) U.S.
- (3) Cobra (Naja tripudians) Asia.
- (4) King Cobra (Naja bungarus) Asia.
- (5) Kraits (Bungarus fasciatus) Asia.
- (6) Egyptian Asp (Naja haje) Asia.
- (7) Brown Snake of Australia (Diemenia textilis) Australia.
- (8) Australian Black Snake (Pseudechis porphyriacus) Australia.
- (9) Death-Adder (Acanthopus antarcticus) Australia.

(B) Producing venom particularly toxic to the vascular system.

- (1) Western Diamond Back Rattler (Crotalus atrox) U.S. and Mexico.
- (2) Eastern Diamond Back Rattler (Crotalus adamantens) U.S.
- (3) Red Rattler (Crotalus exul) U.S.
- (4) Copperhead (An astrodon contortrix) U.S.
- (5) Water Moccasin (A piscivorus) U.S.
- (6) "Fer-de-Lance" (Bothrops lanceolata) Central & South America.
- (7) Urutu or Cross Viper (Bothrops alternata) Central and South America.
- (8) Surucucu or Bushmaster (Lachesis muta) Central & South America.
- (9) Neotropical Cascavel (Crotalus terrificus) Central & South America.
- (10) Russell's Viper or Daboia (Vipera russellii) Asia and Africa.
- (11) Habu (Trimeresurus laboriridis) Asia and Africa.
- (12) Puff-Adder (Bitis arietans) Asia and Africa.

Poisonous snakes are so widely distributed that we list special precautions only for those countries where the risk from snake-bite is of serious concern.

Precautions include: The wearing of boots when traveling through snake-infested areas, use of a flashlight at night to avoid stepping on snakes inadvertently; turning shoes and boots upside down and shaking before putting them on in the morning; the carrying of a

syringe and tube of antivenin* for prompt use in case of bite (different antivenins are of course necessary for the bites of different snakes, but combined antivenins are now available locally which are useful against the bite of any snake ordinarily found in that area).

20. Specific precautions against the Tropical Treponematoses.

This group includes (A) Yaws, which is caused by the Treponema pertenue and transmitted from man to man by direct contact or by non-biting flies; (B) Pinta (carate), which is apparently caused by the Treponema carateum and probably transmitted from man to man by the bite of blood-sucking insects such as certain Simulium species of black gnats; (C) Bejel caused by the Treponema pallidum and transmitted from man to man by direct contact possibly also by flies and other insect vectors.

Precautions against Yaws include: Avoid contact with cases of yaws; protect open wounds from flies by covering the wounds with sterile bandages.

Precautions against Pinta (carate) include: The wearing of gnat-proof clothing and veils; the use of smoke smudges to keep gnats away from an encampment; the use of insect repellent.

Precautions against Bejel include: Avoid contact with cases of Bejel; protect open wounds from flies by bandages.

21. Specific precautions against Trypanosomiasis.

This disease occurs in three different forms (A) that caused by the Trypanosoma gambiense and transferred from man to man and animal to man by the tsetse fly, Glossina palpalis and Glossina tachinoides; (B) that caused by the Trypanosoma rhodesiense and transferred from man to man and animal to man by the tsetse fly, Glossina morsitans; (C) that caused by the Trypanosoma cruzi and transferred from man to man and from Armadillo, opossum, etc. to man by several species of Triatoma ("cone-nosed," reduviid bugs) (A) and (B) are often called "Sleeping Sickness", (C) is often called "Chagas' Disease".

Precautions against Trypanosomiasis caused by Trypanosoma gambiense and by Trypanosoma rhodesiense include: Screening of quarters; the wearing of leggings or mosquito boots (the tsetse fly usually bites in daylight and on the legs; therefore shorts should not be worn in tsetse-fly areas); the avoidance of shaded areas along streams; spraying of quarters twice daily with Pyrethrum-freon insecticide aerosol contained in a metal cylinder with spray nozzle attached; the use of repellents; the hyperendemic areas, an injection of Naphuride may be taken, it appears to give protection for about 3 months.

*This will be necessary only under such special conditions as when traveling afoot in areas where venomous snakes are abundant.

Precautions against Trypanosomiasis caused by Trypanosoma cruzi include: Avoidance of adobe and thatched huts of natives where "conenosed bugs" commonly hide; screening of quarters and use of mosquito bar over bed; the choice of quarters so built as to prevent the burrowing of armadillos under the house.

22. Precautions against Tularemia.

The cause of this disease is the Bacterium tularense. It is primarily a fatal disease of wild rodents especially rabbits and hares. It may be transferred to man by the bite of the fly (Chrysops discalis), by the bite of ticks (Dermacentor andersoni, or D. variabilis), by contact with sheep, rabbits, water rats, ground hogs, tree squirrels, etc. or their hides or parts.

Precautions include: The use of rubber gloves in the handling or skinning of possibly infected animals; the avoidance of handling or crushing with the bare hands blood-sucking flies or ticks; disinfection of all bites, scratches or abrasions on hands in infected areas; avoidance of tick-bite as far as possible; the thorough cooking of all wild game; the spraying of the outer clothing every 2 weeks with 200 c.c. of a tick repellent such as Stock No. S13-450 or dusting the belt line, inner seams of the clothing, the socks, shoes and bedding with Insect Powder for Body Crawling Insects, Stock No. S13-451, once a week.

23. Specific precautions against Typhus Fever and Related Diseases.

These diseases occur in four important forms: (A) "Epidemic typhus" which is usually caused by the Rickettsia prowazeki and transmitted from man to man by the body louse or the head louse by means of louse excreta being rubbed into the bitten or abraded skin; (B) "Endemic typhus" which is also usually caused by the Rickettsia prowazeki but is transmitted from its reservoir in rats to man by rat fleas particularly Xenopsylla cheopis; (C) "Q Fever" which is caused by the Rickettsia burneti and is usually transferred to man from its reservoir in the marsupial, bandicoot by the tick, Hemaphysalis humerosa or the Dermacentor andersoni; (D) Japanese River Fever (mite typhus) which is caused by the Rickettsia tsutsugamushi and transferred to man from its reservoir in field mice by the larval form of the kedani mite, Trombicula akamushi, and other species of mites.

Precautions for "Epidemic Typhus" include: The prevention of louse infestation by frequent bathing, frequent change of underclothing, frequent inspection of body and clothing; the use of Insect Powder for Body Crawling Insects, Stock No. S13-451, dusting lightly the inside seams of clothing or infested parts of the body at weekly intervals; the use, when in close contact with typhus patients of louse-proof clothing (this consists of a one-piece heavy muslin garment which goes over and covers the shoes and is tied about the neck; cotton gloves are sewed in

the sleeves; a hood may be attached; all openings are closed by a broad strip of adhesive); delousing of the clothing by means of steam or by methyl bromide in a gas-tight bag (25 lbs. of clothing or blankets are placed in the special gas-tight bag with a 3/4 c.c. vial of methyl bromide near the bottom of the bag; the top of the bag is closed by making 2 or 3 folds of the open end over a strip of rigid material and fastening securely with metal snaps, spring clasps, etc.; the ampule is broken by pressure from the outside; the bag is kept at 70°F. for not less than 6 hours; this will kill both lice and eggs); the delousing of the head, if nits or lice are found, by clipping hair short, applying vinegar or 10% acetic acid followed by a vigorous shampoo with hot, soapy water containing 25% kerosene; delousing of the body and pubic region by rubbing in 10% ammoniated mercury ointment, dusting with talcum powder, and washing off with soap and hot water after 24-36 hours (if Merck's Cuprex is available it is perhaps most convenient for all delousing - it is rubbed into the affected areas for the first application, 10 minutes later a second application is made, the two applications are permitted to remain on for 1 to 4 hours; while the hair is still moist a fine comb is used to remove dead pediculi and ova; this is followed by shampoo with soap and hot water, proximity to fire being carefully avoided); immunization with a vaccine consisting of a suspension of killed typhus rickettsiae cultured by the Cox yolk-sac method (the initial vaccination consists of two subcutaneous injections of 1 cc. each at intervals of 7 to 10 days, a "booster dose" of 1 cc. is given every 6 months following the initial vaccination as long as there is danger of epidemic typhus fever).

Precautions against "Endemic Typhus" include: The avoidance in endemic areas of buildings apt to harbor rats, i.e. grocery stores, food or grain warehouses, restaurants; the disinsectization of quarters with 5% DDT in kerosene; the use of a repellent on the clothing and exposed parts.

Precautions against "Q Fever" include: Avoid tick-infested areas; wear trousers tightly fitted inside leggings, boots or socks; remove ticks from body at least twice daily by applying kerosene and removing with tweezers, applying 2% tincture of iodine to the bite and washing hands thoroughly if ticks have been handled; spray on the outer clothing every 2 weeks 200 c.c. of a tick repellent such as Stock No. S13-450 or dust the belt line, inner seams of the clothing, the socks, shoes, and bedding with Insecticide Powder for Body Crawling Insects, Stock No. S13-451 one or more times a week; choose quarters that do not provide a nesting place for animals under the floor.

Precautions against "Japanese River Fever (mite typhus)" include: The avoidance of known infected areas during summer and fall as near as possible, wearing mite-proof clothing; dusting the body with a powder composed of equal parts of flowers of sulphur and talcum; bathing with hot water and soap and changing clothing immediately after possible exposure. The use of Insect Repellent.

24. Specific precautions against Weil's Disease (Leptospirosis jaundice).

This form of infectious jaundice is caused by the Leptospira icterohemorrhagiae and transmitted by the ingestion of food or water contaminated with the urine of infected rats or by contact of the skin and mucous membranes with water contaminated with the urine of infected rats.

Precautions include: The protection of food and water supply from rat contamination; the avoidance of swimming in waters heavily contaminated with rat urine; prompt and thorough bathing in clean hot water and soap if one falls into a canal or other obviously polluted water in an area where this disease is widespread; the use of food and water precautions as recommended in 1.

25. Specific precautions against Yellow Fever.

This disease occurs in two forms (A) "Classical Yellow Fever." caused by the virus of yellow fever and transmitted from man to man by the bite of the Aedes aegypti mosquito; (B) "Jungle Yellow Fever" caused by the virus of yellow fever and transmitted from its reservoir in susceptible forest animals such as the monkey to man by the bite of a number of species of Aedes mosquitoes as well as of other genera of mosquitoes.

Our two means of prevention are protection from mosquitoes, and the use of yellow-fever vaccine.

Precautions against mosquitoes include: Screen all quarters with screening 18 to 20 mesh to the inch; disinsectize the screened quarters twice daily with Pyrethrum-freon insecticide aerosol; if practicable locate living quarters at least a half mile from yellow fever infected native populations; when exposed in the open air to the bite of the mosquito wear headnet, gloves, and mosquito boots or use Insect Repellent. (To use, shake about 12 drops into one hand; rub hands together; apply in a thin layer by rubbing until all areas of exposed skin are covered; apply in a similar manner on clothing where insects are biting through; spray about 10 c.c. inside the shirt; apply with caution round eyes and mouth).

Yellow fever vaccine is absolutely necessary. The initial dose is 0.5 c.c. of approximately 1:10 dilution of the concentrated vaccine given subcutaneously; a "booster dose" of 0.5 c.c. should be given in the presence of an epidemic or upon entering an area where yellow fever is widespread. In a yellow fever area revaccination should be done every two years routinely.

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